

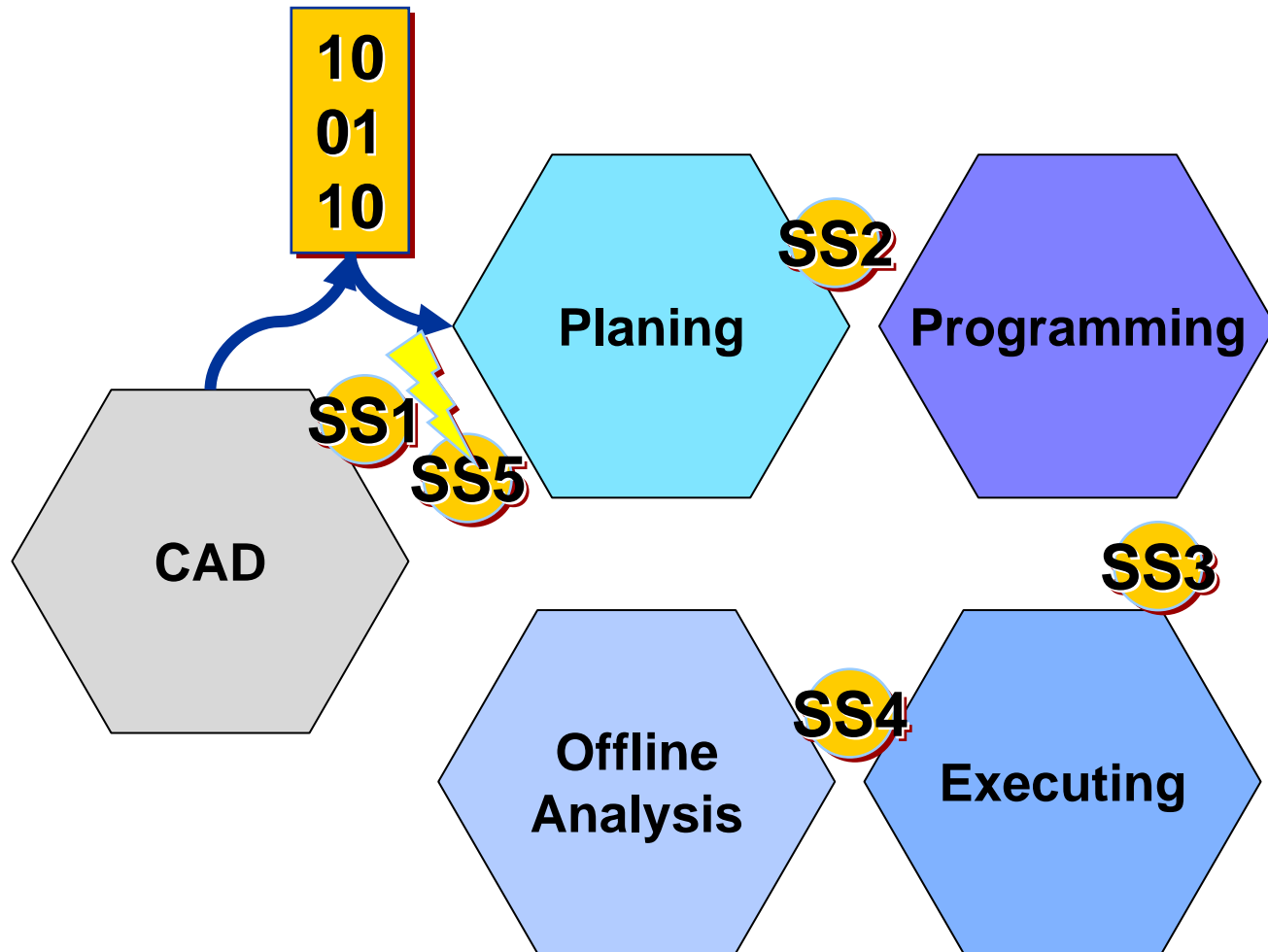
Technical Aspects of I++DMS





Technical Aspects of I++DMS

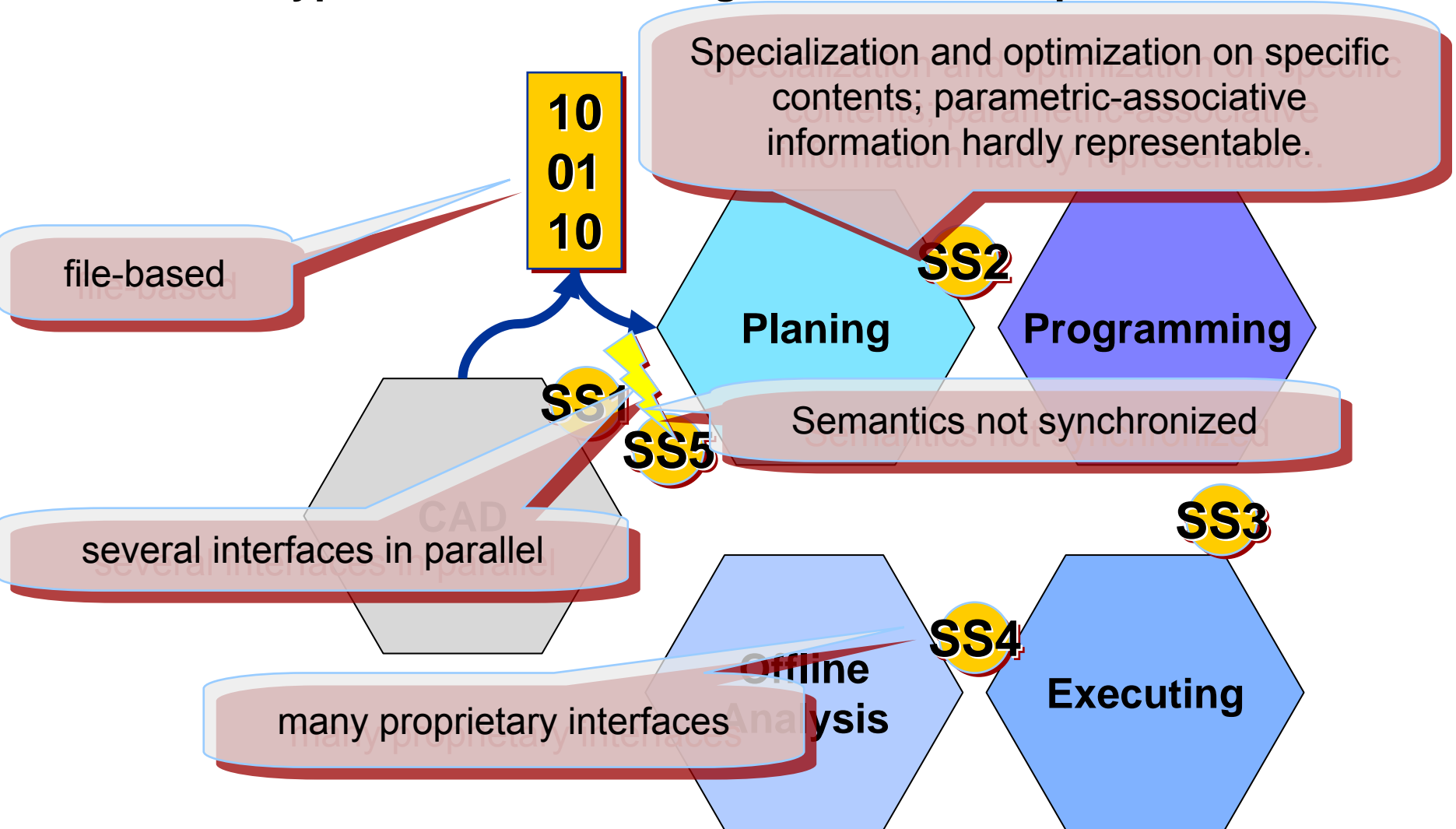
Typical Interfaces along Product Development Chain / QA





Technical Aspects of I++DMS

Typical Interfaces along Product Development Chain / QA



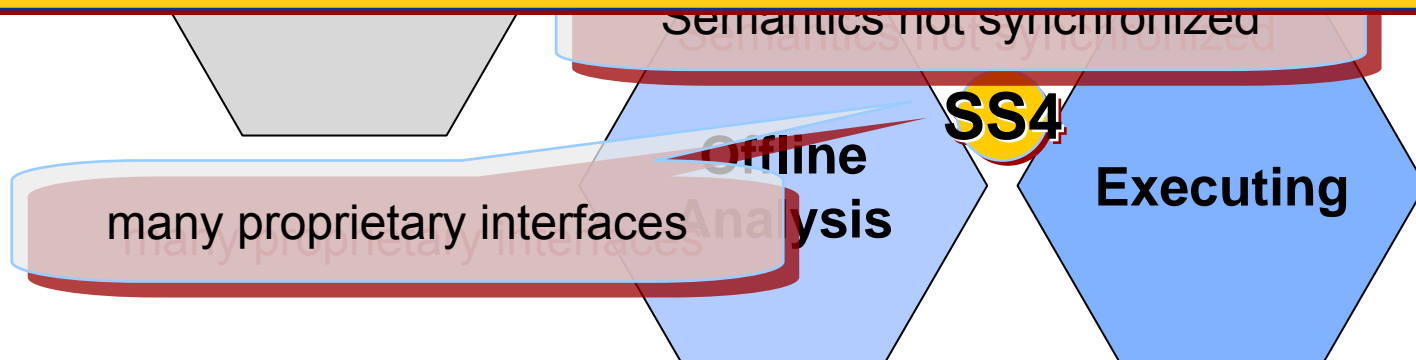


Technical Aspects of I++DMS

Typical Interfaces along Product Development Chain / QA

Effects on Quality Assurance

- **CAD Information** gets lost for downstream processes (features, tolerances, material thickness ...)
- **Maintenance and change effort**
- **No free choice** in **software** and **hardware**
- **No comparability** of inspection results.
- **Proprietary exchange formats** problematic for SW-vendors.

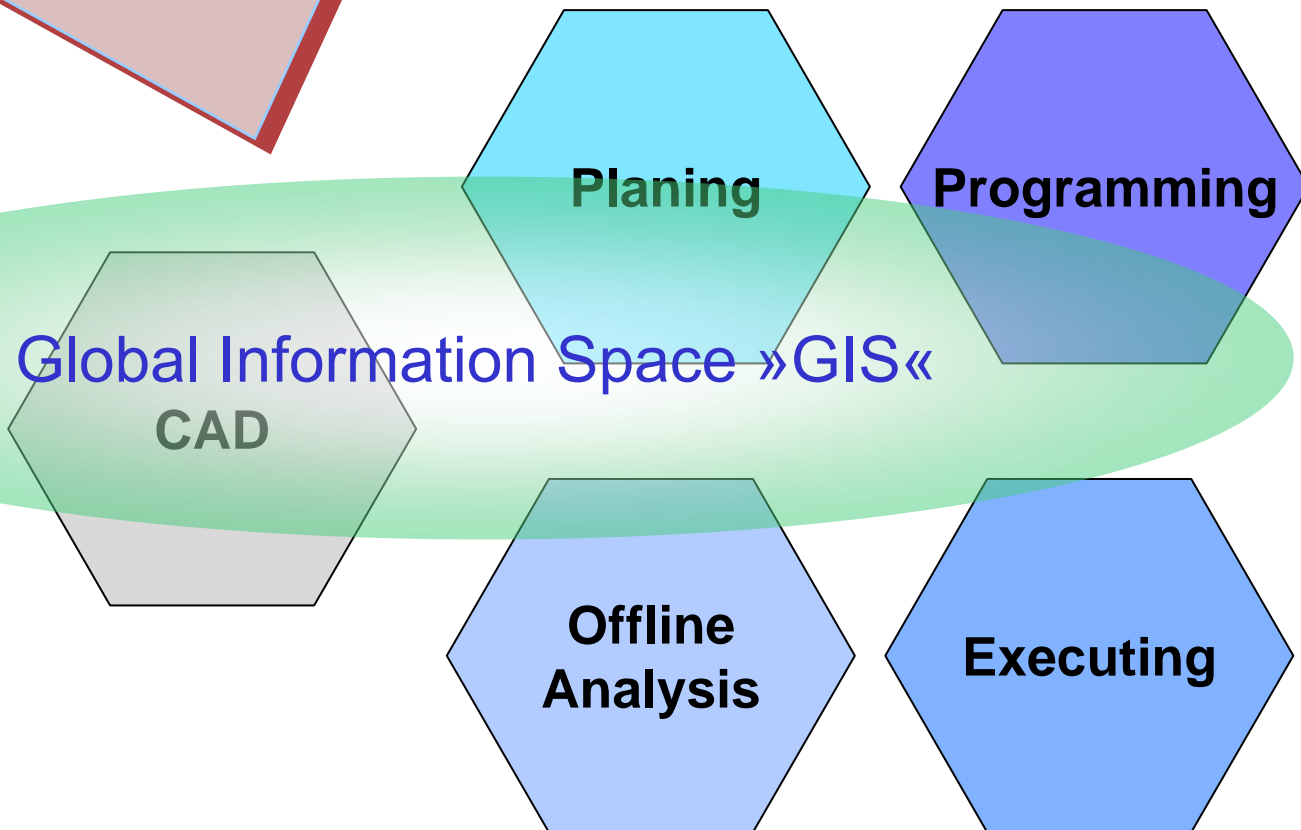




Technical Aspects of I++DMS

The I++DMS Information Space

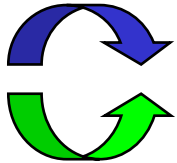
Goal: One information space; all application are contributing to and utilizing according to their needs.



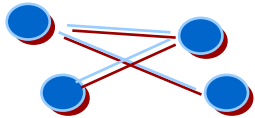


Technical Aspects of I++DMS

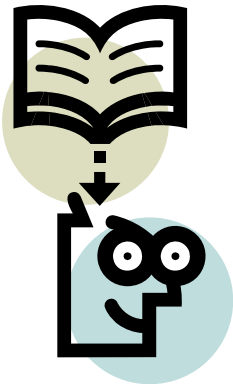
The I++DMS Information Space – Motivation



- **Dynamic** of information.
→ GIS is extendable; the service-based communication interface is extendable; exchange format is stable.



- **Relationships** are essential → Inside the GIS, information is tightly correlated. Semantics through holistic viewpoint.



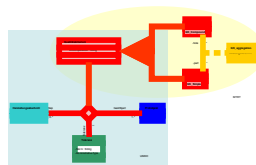
- **Transparency**: intellectual property must not drain away inside software applications.
→ GIS meta level; I++ information model in the center.



Technical Aspects of I++DMS

Central Components of I++DMS

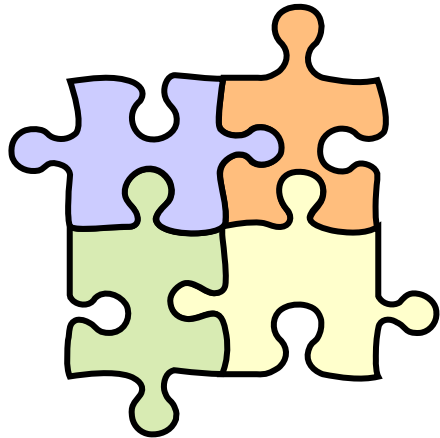
- **Service-based communication:** → Abstracting services from applications.
- **Centralistic approach:** information-orientation instead of application-orientation.
→ individual applications are replaceable; top-level automation becomes possible.
- **Representation format:** ULEO XML schema for all user data; commonly-understandable language.
- **I++ Information model:**
 - ...defines the **vocabulary** of applications in quality assurance inside the GIS.
 - ...is **extendable** by definition.
 - ...is available in release 0.9 today; **Comments** and questions are welcome (↑ I++ Workshop).





Technical Aspects of I++DMS

Key Properties of I++DMS



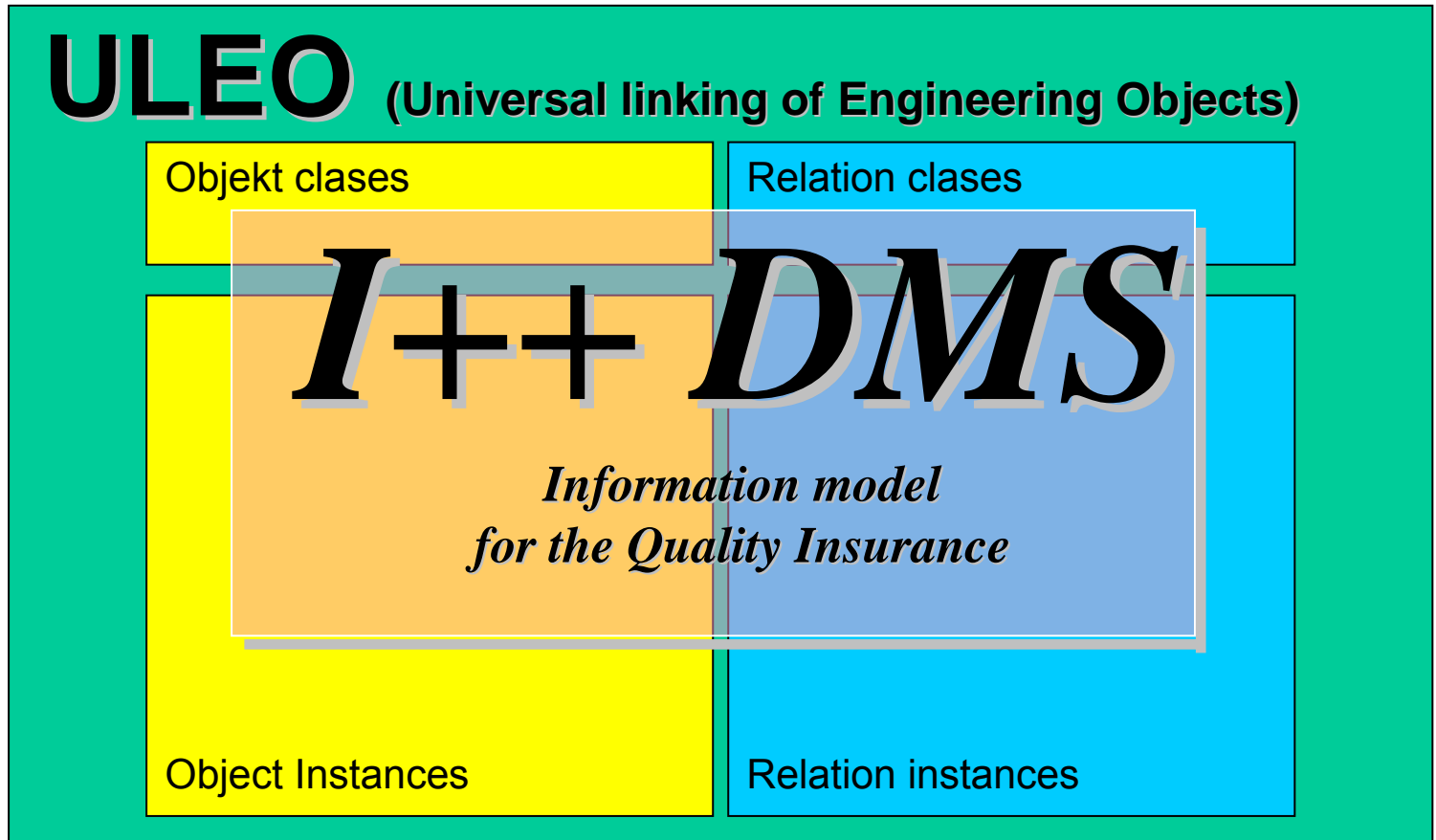
- **Scalability: flexible applicability in multiple expansion stages**
 - **Intensity**: file-based vs. runtime communication
 - **Range** of information to be exchanged (sub-set of GIS information)
 - Exploitation of **background knowledge** (e.g. inspection strategies).

- **Openness:**
 - Compatible to **any S/W application**
 - ...for new **information sets**.
 - ...for new **functionality** (services, see SOA)
 - ...for new **communication technologies** (WebServices, CORBA).



Technical Aspects of I++DMS

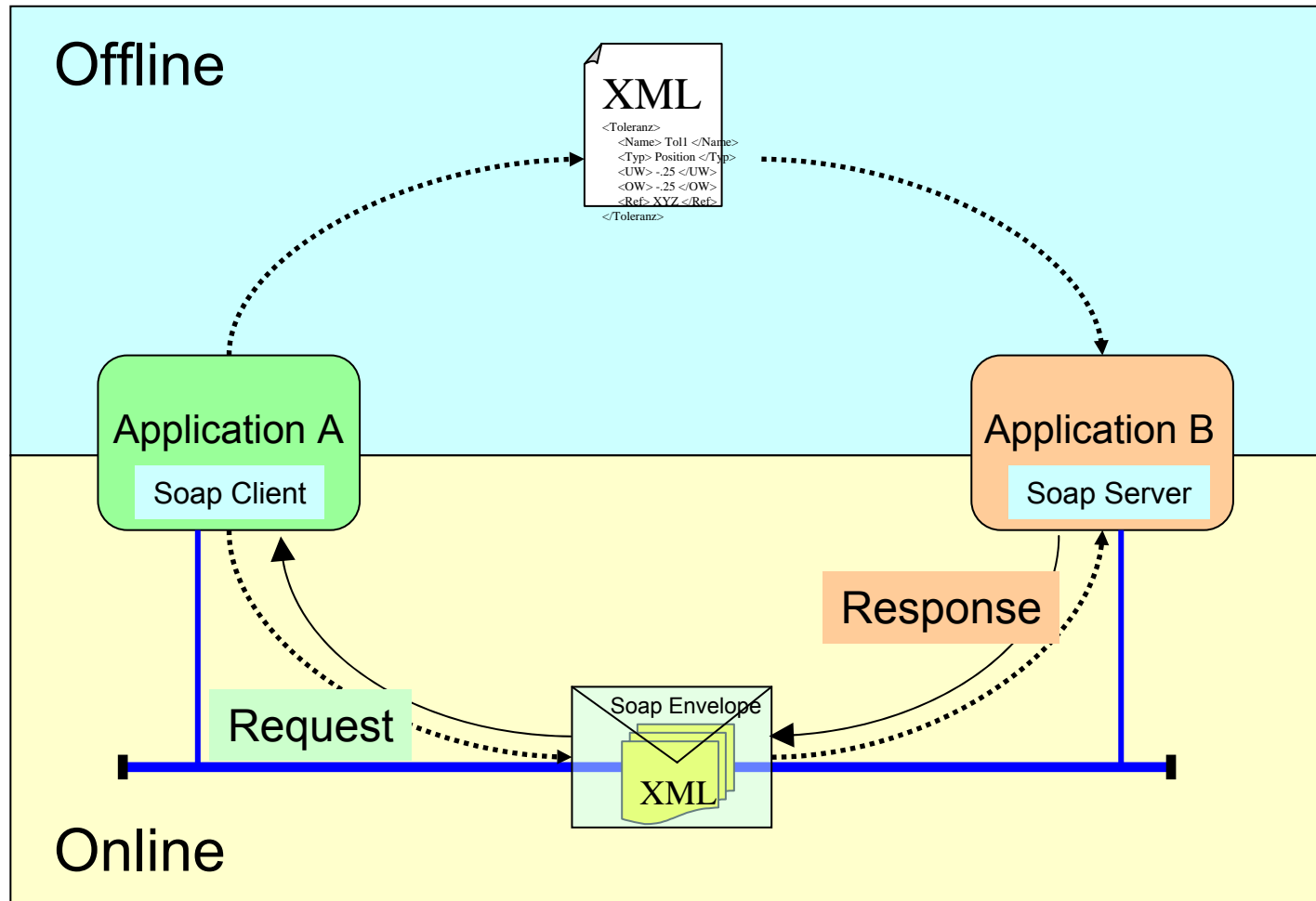
Universal Datamodel with XML scema and webservice
as container for the I++ Informationmodel





Technical Aspects of I++DMS

Client – Server Architektur

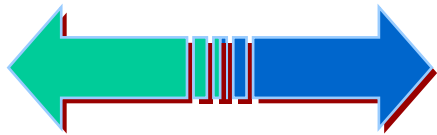




Technical Aspects of I++DMS

Effects of I++DMS

GIS



- **one single global information space** replaces multiple local interfaces.
- **Integrated** information replaces information isles; **Informational backbone**.
- **Downstream applications** may use **hardly accessible** information (↑CAD); Basis for sophisticated and highly-specialized software.
- (the fine print):
certain loss in efficiency by principle (rising universality and expressivity).



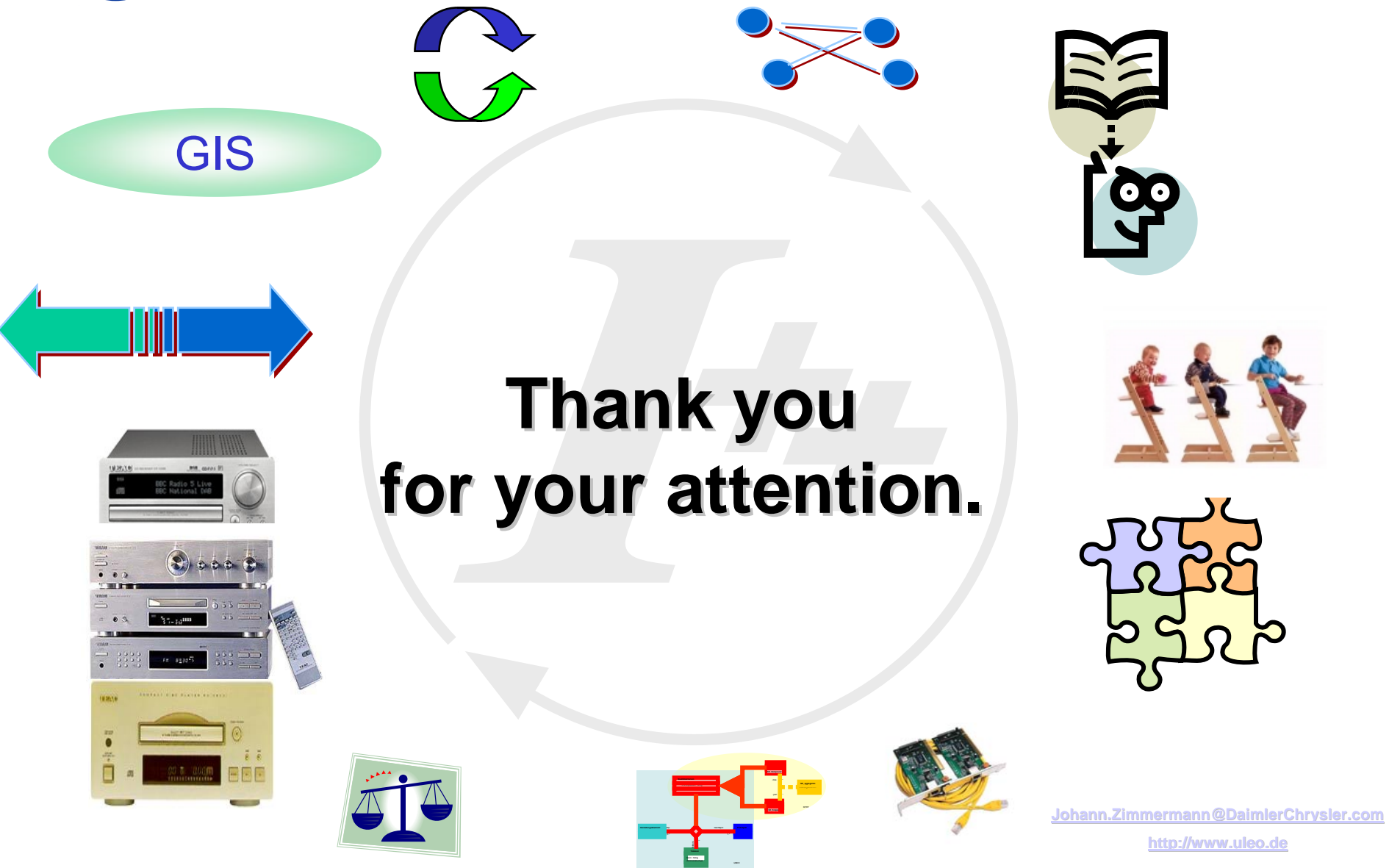
The I++DMS Starter Kit

- Free delivery by I++ OEMs to foster spreading of I++DMS
- „Test bed“ and documentation, consisting of freely available components...
 - ULEOserver
 - source code examples
 - documentation I++ information model
 - documentation of underlying technology Universal Linking of Engineering Objects (ULEO).
- Software service providers are offering technical support and software development.





Technical Aspects of I++DMS



Johann.Zimmermann@DaimlerChrysler.com

<http://www.uleo.de>